



**Alchemy Engineering Associates, Inc.**

**Mining & Civil Engineering Consultants**

546 West Old Middle Creek Rd.

Prestonsburg, Kentucky 41653

Office (606) 886-8889

Fax (606) 886-8847

E-mail: robin@alchemyengineering.net

November 6<sup>th</sup> 2009

Division of Water  
Surface Water Permits Branch  
200 Fair Oaks Lane  
Frankfort, Ky 40601



Re: Clarence Hayes, LLC  
DNR No. 836-0352  
KPDES Permit Application

Dear Heather Dodds

Under cover of this letter you will find an "Intake and Effluent Characteristics" narrative for the previously submitted NOI-CM and a new SDAA for the above referenced KPDES application..

If you should have any questions or comments concerning the above referenced permit please contact me at (606) 886-8889.

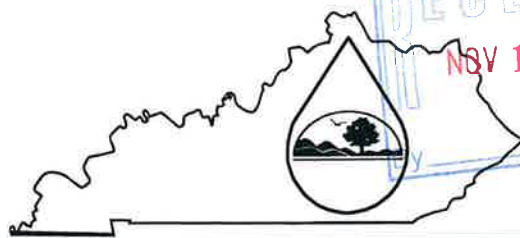
Sincerely,

Robin Scudder  
Permit Tech.  
Alchemy Engineering Associates

### **INTAKE AND EFFLUENT CHARACTERISTICS**

This is a new surface mining permit and no sediment structures have yet been constructed to provide outfall. Effluent characteristics will be supplied within two years of permit issuance.

# KPDES FORM SDAA



## Kentucky Pollutant Discharge Elimination System (KPDES)

### Socioeconomic Demonstration and Alternatives Analysis

The Antidegradation Implementation Procedure found in 401 KAR 10:030, Section 1(3)(b)3 requires KPDES permit applications for new or expanded discharges to waters categorized as "Exceptional or High Quality Waters" to conduct a socioeconomic demonstration and alternatives analysis to justify the necessity of lowering local water quality to accommodate important economic or social development in the area in which the water is located. This demonstration shall include this completed form and copies of any engineering reports, economic feasibility studies, or other supporting documentation

#### I. Project Information

**Facility Name:** Clarence Hayes, LLC, DMRE Permit No. 836-0352

**Location:** Adjacent to US 23 near Betsy Layne

**County:** Floyd

**Receiving Waters Impacted:** Storm Water Ditch draining into Levisa Fork of Big Sandy River

#### II. Socioeconomic Demonstration

##### 1. Define the boundaries of the affected community:

(Specify the geographic region the proposed project is expected to affect. Include name all cities, towns, and counties. This geographic region must include the proposed receiving water.)

The proposed project is located adjacent to US23 in south eastern Floyd County, approximately 7 miles south of the city of Allen, approximately 15 miles south of the city of Prestonsburg, approximately 0.35 miles south of the community of Betsy Layne and approximately 0.7 miles north of the community of Harold. The nearest receiving stream is the Levisa Fork of the Big Sandy River, the latter being approximately 0.06 miles west staceyfrom the proposed project area on the opposite side of US23.

##### 2. The effect on employment in the affected community:

(Compare current unemployment rates in the affected community to current state and national unemployment rates. Discuss how the proposed project will positively or negatively impact those rates, including quantifying the number of jobs created and/or continued and the quality of those jobs.)

See Attachment II 2.

## **II. Socioeconomic Demonstration- continued**

### **3. The effect on median household income levels in the affected community:**

(Compare current median household income levels with projected median household income levels. Discuss how proposed project will positively or negatively impact the median household income in the affected community including the number of households expected to be impacted within the affected community.)

Employment in the mining industry in Eastern Kentucky is very fluid with mines closing regularly due to coal depletion and new mines opening as coal becomes accessible. When a mine closes there is an immediate impact on the employment of those directly involved in the operation with further impacts felt by those in the local support industry that provide services such as transportation, equipment and engineering.

The project will be located in a rural, impoverished area desperately in need of jobs. Wages in the mining industry are significantly greater than the average wage in this part of Kentucky. Mining pays an average weekly wage of \$788 in Floyd County. This is compared to an average weekly wage of \$694 in this part of the state (2008 US Bureau of Labor Statistics).

This operation will provide employment directly to approximately 4 workers during the life of the operation. The project will potentially provide additional jobs in other sectors of the economy such as engineering, fuel and transportation, therefore it can be determined that a minimum of 4 households will be positively impacted by this operation.

### **4. The effect on tax revenues of the affected community:**

(Compare current tax revenues of the affected community with the projected increase in tax revenues generated by the proposed project. Discuss the positive and negative social and economic impacts on the affected community by the projected increase.)

Tax revenues in this part of Kentucky are affected by the transient nature of employment opportunities. Therefore any increase in the tax base, or at a minimum the maintaining of the status quo prevents there being a negative affect on the local community.

It is anticipated that the surface mining operation will have a projected life of one year producing approximately 33,188 tons of coal which will give a gross income of approximately \$1,692,588. This will lead to federal, state, local and severance tax revenues in the region of \$99,564. Based on a minimum of four people being employed during the course of this operation there will be a total of approximately \$19,668 paid in federal, state and local taxes by the employees. The extra tax revenue generated by this operation especially that at local and state level will be available for spending on the local infrastructure such as roads and schools and attracting other means of employment to the area.

The project will be located in a rural, impoverished area desperately in need of jobs. Thus, mining operations positively affect the local economy more so than other industries. The increased tax revenues, in the form of federal, state, local and severance will contribute to spending on the local infrastructure. Production bonuses paid to employees from this operation will make available more money for spending in the local economy therefore benefiting more than those directly involved in the project.

## **II. Socioeconomic Demonstration- continued**

### **5. The effect on an existing environmental or public health in affected community:**

(Discuss how the proposed project will have a positive or negative impact on an existing environmental or public health.)

See Attachment II 5.

### **6. Discuss any other economic or social benefit to the affected community:**

(Discuss any positive or negative impact on the economy of the affected community including direct and or indirect benefits that could occur as a result of the project. Discuss any positive or negative impact on the social benefits to the community including direct and indirect benefits that could occur as a result of the project.)

The facility, a surface mine will provide employment to approximately 4 workers directly during the life of the operation. Also, the project will provide additional jobs in other sectors of the economy such as engineering, fuel and transportation. The project will be located in a rural, impoverished area desperately in need of jobs. Wages in the mining industry are significantly greater than the average wage in this part of the state. Thus, mining operations positively affect the local economy more so than other industries. The increased tax revenues, in the form of federal, state, local and severance will contribute to spending on the local infrastructure. Production bonuses paid to employees from this operation will make available more money for spending in the local economy therefore benefiting more than those directly involved in the project.

### **III. Alternative Analysis**

#### **1. Pollution prevention measures:**

(Discuss the pollution prevention measures evaluated including the feasibility of those measures and the cost. Measures to be addressed include but are not limited to changes in processes, source reductions or substitution with less toxic substances. Indicate which measures are to be implemented.)

See Attachment **III 1.**

#### **2. The use of best management practices to minimize impacts:**

(Discuss the consideration and use of best management practices that will assist in minimizing impacts to water quality from the proposed permitted activity.)

See Attachment **III 2.**

#### **3. Recycle or reuse of wastewater, waste by-products, or production materials and fluids:**

(Discuss the potential recycle or reuse opportunities evaluated including the feasibility of implementation and the costs. Indicate which of, of these opportunities are to be implemented)

See Attachment **III 3.**

### **III. Alternative Analysis - continued**

#### **4. Application of water conservation methods:**

(Discuss the potential water conservation opportunities evaluated including the feasibility of implementation and the costs. Indicate which of, of these opportunities are to be implemented)

The primary discharge from this operation will be storm water runoff so any waters leaving the confines of the permitted area are only those that would occur naturally.

#### **5 Alternative or enhanced treatment technology:**

(Compare feasibility and costs of proposed treatment with the feasibility and costs of alternative or enhanced treatment technologies that may result in more complete pollutant removal. Describe each candidate technology including the efficiency and reliability in pollutant removal and the capital and operational costs to implement those candidate technologies. Justify the selection of the proposed treatment technology.)

1) Waste Water Treatment Plant – This was investigated and the cost for a stand-alone treatment plant capable of handling the potential amount of water run off from the project is approximately \$400,000, which would have to be borne out prior to any operations taking place on the project area. Operational and topographic considerations were also taken into account as due to the size of a treatment plant for this operation, the dynamic nature of the project and requirements of the DMRE concerning reclamation the positioning of this equipment would be extremely problematical. Any treatment plant would need to be constructed, dismantled and relocated during operations adding a further \$100,000 to the operation. The operation is proposed to generate \$1,692,588 with operating and tax costs of \$1,659,400 leaving a profit of \$33,188.

2) The use of an evaporation plant was considered, however a plant with the capacity of 150gph, which is considerably less than what would be required for a 25 year/24 hour storm event is approximately \$100,000. The project would require several of these plants and the same concerns regarding DMRE regulations concerning reclamation make this, like a treatment plant, not a viable alternative.

3) Wetland – The primary need for treatment of the water is sedimentation control and wetlands are not effective for treating sediment due to the fact that over time they will fill with silt and dry up. Additionally, a wetland used for water treatment would require purchase and licensing of suitable land, which is not available in this project area.

### **III. Alternative Analysis - continued**

#### **6. Improved operation and maintenance of existing treatment systems:**

(Discuss improvements in the operation and maintenance of any available existing treatment system that could accept the wastewater. Compare the feasibility and costs of improving an existing system with the feasibility and cost of the proposed treatment system.)

There has been pre-law mining carried out in the affected watershed along with spoil dumping from road construction; thus there is sediment being discharged unabated from the project area. Currently, water is discharged from the proposed permit area without passing through any sort of sediment and drainage control structure.

The proposed pond will collect sediment and storm water runoff as it discharges from a mining area. Sediment will settle out of the water before it is discharged downstream from the project area. All runoff from existing disturbances will also be channeled into the pond and it will be regularly tested before it leaves the permit area. If water quality is found to be potentially detrimental to the stream environment it will be treated. Due to this testing, the water entering the stream is probably going to be of a higher quality than that which naturally enters the watercourse. The retention structures will also increase the sediment control from the existing disturbances.

#### **7. Seasonal or controlled discharge options:**

(Discuss the potential of retaining generated wastewaters for controlled releases under optimal conditions, i.e. during periods when the receiving water has greater assimilative capacity. Compare the feasibility and cost of such a management technique with the feasibility and cost of the proposed treatment system.)

The primary discharge from this operation will be storm water runoff so any waters leaving the confines of the permitted area are only those that would occur naturally. However, the storage of water for controlled release was investigated but due to DMRE regulations governing the operation appertaining to land stabilization and reclamation it is not possible to leave areas large enough to store water on without any leaving the confines of the project area.



### III. Alternative Analysis - continued

#### 8 Land application or infiltration or disposal via an Underground Injection Control Well

(Discuss the potential of utilizing a spray field or an Underground Injection Control Well for shallow or deep well disposal. Compare the feasibility and costs of such treatment techniques with the feasibility and costs of proposed treatment system.)

An alternative to surface discharge from the project area is subsurface disposal via injection wells but the cost associated with this, approximately \$50,000 per well for the drilling alone, completely removes the projected profit for the operation. There are several abandoned mine voids in the vicinity of the project area as deep mining has been conducted in the Elkhorn #2 seam and any subsurface storage of surface water increases the potential for an outcrop blowout or blowout from an old mine adit. This combined with the fact that any blowout from these works would occur on land not under the ownership or control of the operating company and would invariably involve compensation makes this an economically unattractive alternative.


In addition to potential safety impacts associated with subsurface disposal, this alternative would reduce the quantity of water available to support downstream aquatic communities. Thus, there would be potential impacts to fish and other aquatic communities.

#### 9 Discharge to other treatment systems

(Discuss the availability of either public or private treatments systems with sufficient hydrologic capacity and sophistication to treat the wastewaters generated by this project. Compare the feasibility and costs of such options with the feasibility and costs of the proposed treatment system.)

See Attachment III 9.

**IV Certification:** I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and Title:	Clarence Hayes, Member	Telephone No.:	(606) 478-9429
Signature:		Date:	11/06/09